## REMARKS

Claims 1-8, 10-35 and 37-69 are pending in the application.

Claims 1-3, 46-48, 54-56 and 62-64 stand rejected.

Claims 4-8, 49-53, 57-61 and 65-69 stand objected to.

Claims 10-35 and 37-45 have been deemed allowable.

Claims 60 and 62-65 have been amended.

Claims 9 and 36 were previously cancelled.

### *Formal Matters*

Applicants wish to thank the Examiner for the indicated allowability of claims 10-35 and 37-45.

In the present Office Action, Applicants' claims 4-8, 49-53, 57-61 and 65-69 were objected to as being dependent up on rejected base claims, but indicated as being otherwise allowable if rewritten in independent form. Applicants wish to express their appreciation for the Examiner's indication of allowability with regard to these claims, but have elected not to rewrite the indicated claims in independent form at this time. Applicants reserve the right to submit one or more claims including the claim elements indicated as allowable by the Examiner in a subsequent response.

### *Rejection of Claims under 35 U.S.C. § 102*

Claims 1-3, 46-48 and 54-56 stand rejected under 35 U.S.C. § 102(e), as being anticipated by Basso et al., U.S. Patent 6,370,119 B1 (Basso). While not conceding that any

of the Examiner's cited references qualify as prior art, but instead to expedite prosecution, Applicant has elected to traverse the claim rejections as follows. The following arguments are made without prejudice to Applicant's right to establish, for example in a continuing application, that one or more cited reference(s) do not qualify as prior art with respect to an invention embodiment currently or subsequently claimed.

Applicant appreciates the Examiner's clearly careful review of the prosecution of the instant application, the instant application and the references. However, Applicant respectfully maintains that the cited reference, ***Basso***, fails to teach all elements of Applicants' claims, and further teaches away from the claimed invention.

As an initial matter, the "best path" determined by Basso includes restrictive cost and additive cost, "... with the determination based upon restrictive and additive characteristics of the network links." (col. 2, lines 42-43) Thus, the initial terms that need to be understood are restrictive cost and additive cost.

With regard to additive cost, Basso states at col. 5, lines 7-26:

> "Another type of link characteristics are the so-called additive costs associated to each link, an example of which is path length. Path length is a function of the overall transmission delay imposed by the path between two end nodes. In most high speed networks, the delay (path length) is not a major consideration since the worst-case delay through such a network is nearly always acceptable. In the present embodiment of the invention the additive cost considered is the so-called administrative weight as defined in the PNNI standard. The administrative weight is a value set by the network operator. It is used to indicate the relative desirability of using a link or node for whatever reason significant to the network operator. Administrative weight is a required topology metric for all service categories. This is a dimensionless value, the default value of which is set to a particular value referred to as

> DefaultAdminWeight. A higher value describes a link or node which is less desirable for use. The administrative weight of a path is defined as the sum of the administrative weights of the links and nodes contained in the path."

Thus, additive costs (e.g., path length, delay, and so on) are summed to arrive at an overall additive cost number, which reflects the desirability of the given link (and in total, the given path). Basso thus seeks to minimize additive costs. (col. 2, lines 46-49)

With regard to restrictive cost, the present Office Action correctly notes the definition of restrictive cost in Basso, at col. 2, lines 23-36, lines 23-33 of which read:

> "The bandwidth characteristic of a link is typically a so-called restrictive cost; that is, the narrowest bandwidth segment (link) of the path will determine the overall path bandwidth. Furthermore the restrictive cost (e.g., available bandwidth) may be different when considering a path in one direction of transmission or the other. What is needed is a path selection algorithm that computes the best path taking into account both additive cost and restrictive cost, with the restrictive cost being dependent on the proposed direction of transmission."

Thus, the restrictive cost for the path is defined by the link having the lowest maximum bandwidth that is available for use. Such a link acts as "the narrowest bandwidth segment (link) of the path", and is therefore the bottleneck for the given path, and so limits the maximum bandwidth available over the given path. Given whatever current conditions exist in the network, then, the restrictive cost for this link (i.e., the bandwidth available through this link) delineates the greatest bandwidth that can possibly be made available over the path in question, given the current network conditions.

Thus, using restrictive and additive costs for each link, "the path determination process of [Basso] ... determines the best path from the source node to the destination node, that is, the path that is **widest in terms of restrictive cost** and shortest in terms of additive cost while still satisfying the requested parameters of the proposed connection." (col. 5, lines 47-52; emphasis supplied) As can be seen, Basso strives to provide the "widest" path possible (i.e., a path having the maximum bandwidth). Since the restrictive cost is the inverse of bandwidth, Basso seeks to minimize restrictive cost (thus reducing restriction by increasing bandwidth). Basso's technique thus remains focussed on providing as much bandwidth to the requested path as is possible within the confines of the network's present network conditions (e.g., subject to whatever bottlenecks exist within the links along the path).

Respectfully, Applicant now makes the following observations. The Office Action equates Basso's additive costs to the claimed minimum cost. In light of the foregoing and the observations below, Applicant respectfully assert that this position is inapposite, and, in fact, cannot be made internally consistent.

Applicants respectfully assert that Basso's additive costs cannot be equated to the claimed minimum cost because these two metrics are not the same. Basso defines bandwidth as being a restrictive cost, and separate from additive cost, while the claimed invention includes bandwidth in the claimed minimum cost. This results from the disparity between the manner in which Basso and the claimed invention view bandwidth, a fundamental difference between Basso and the claimed invention.

Basso treats bandwidth as a separate measure (restrictive cost) because Basso is then able to discuss minimizing restrictive cost, and in so doing, treating bandwidth as a parameter to be maximized ("widest in terms of restrictive cost"; more bandwidth is desirable). By

contrast, Basso treats other parameters (additive costs) as parameters to be minimized (more additive costs are undesirable).

However, the claimed invention treats bandwidth (not its inverse, as in Basso) as a cost, and so a parameter to be minimized (not maximized, as in Basso). Understandably, the claimed invention thus prefers the use of as little bandwidth as possible. The claimed invention therefore includes bandwidth in the claimed minimum cost, as the claimed invention seeks to minimize the minimum cost (including the amount of bandwidth consumed by the given path). Thus, a parallel cannot be drawn between the claimed minimum cost and Basso's additive costs because these are fundamentally different parameters, the former including bandwidth, and the latter, not.

Even if such a parallel could be drawn (which Applicant maintains it cannot), Basso's technique and a technique according to the present invention yield markedly different results. The bandwidth provided by Basso's combination of restrictive and additive costs (the primary focus being on the restrictive cost, of course) would be the maximum bandwidth available over the given path. As noted, while Basso is constrained by the maximum restrictive cost (i.e., most restricted bandwidth; or, alternatively, minimum) bandwidth) link in the path, Basso strives to secure the most bandwidth possible in the given situation (i.e., to maximize bandwidth).

By contrast, the claimed minimum cost provides only the bandwidth necessary to meet the requirements requested of the desired path, which may (and often will) be significantly less that the maximum bandwidth available over the given path. Using the claimed invention, the maximum bandwidth available over the path will have no bearing on the bandwidth allocated to the path, because either there will be insufficient bandwidth to allocate the path, or there will be sufficient bandwidth to allocate the path.

An important consideration here is that only the bandwidth necessary to allocate the path will be requested and (if available) allocated. No further bandwidth is sought by the claimed invention (regardless of whether or not such bandwidth is available), and so, in this respect, bandwidth consumption is minimized (in light of the costs associated therewith). This is in contrast to Basso, which seeks to secure the maximum bandwidth available over the path.

The claimed invention therefore treats bandwidth as incurring a cost that is to be minimized, while Basso treats bandwidth as a parameter to be maximized. This naturally leads to Basso's splitting bandwidth and other parameters into restrictive and additive costs, respectively, because such an approach allows Basso to minimize additive costs (reducing such costs) and restrictive costs (thereby maximizing bandwidth). Basso can then treat each separately, thereby maximizing bandwidth while minimizing additive costs. By contrast, in the claimed invention, the claimed minimum cost aggregates bandwidth and other costs together, and seeks to minimize all these parameters, while meeting the needs of the requested path. As will be appreciated, in fact, Basso effectively teaches away from the claimed invention, espousing that bandwidth consumption should be maximized, while the claimed invention consumes only as much bandwidth as is needed to meet the requirements of the requested path.

In light of the foregoing, Applicant therefore respectfully submits that independent claims 1, 46 and 54 are in condition for allowance. Applicant further respectfully submits that claims 2-3, 47-48 and 55-56, which depend from independent claims 1, 46 and 54, are also in condition for allowance, for at least the foregoing reasons.

*Rejection of Claims under 35 U.S.C. § 103*

Claims 62-64 stand rejected under 35 U.S.C. § 103(a), as being anticipated by Basso et al., U.S. Patent 6,370,119 B1 (Basso) in view of Busche, U.S. Patent 5,805,593 (Busche). While not conceding that any of the Examiner's cited references qualify as prior art, but instead to expedite prosecution, Applicant has elected to traverse the claim rejections as follows. The following arguments are made without prejudice to Applicant's right to establish, for example in a continuing application, that one or more cited reference(s) do not qualify as prior art with respect to an invention embodiment currently or subsequently claimed.

Applicant has amended claim 62 in a manner believed to address the above rejection, and therefore respectfully submits that claim 62 is put in condition for allowance thereby. Applicant respectfully reserves the right to argue against the combination of Basso and Busch in further prosecution or a continuing application, with respect to an invention embodiment currently or subsequently claimed therein. Applicant further respectfully submits that claims 63-64, which depend from claim 62, having been amended in accord with claim 62, are also now in condition for allowance.

## CONCLUSION

The application is believed to be in condition for allowance, and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, on March 11, 2005.

Attorney for Applicant(s) — Date of Signature: 3/11/05

Respectfully submitted,

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